Table A.2.15 North Field SWMU 41 Summary of Boring Log and Analytical Data

Boring/ Date/ Report	Total Depth of Boring	Depth to Water[1]	Lithologic Description[2] (Observation Notes)	Maximum PID Response, ppm_v (Depth)	Sample Type[3]	Sample ID (Depth)	Analyses[4]	COC Concentrations Greater Than Delineation Criteria
S1383 1/8/03 Full RFI 2nd Iteration SWMU 41	12	4	Fill: 0-9 (brick fragments at 6, glass at 7, dark gray sludge at 7-9) Clay: 9-12	725 (8-8.5)	O, U, F	S1383B3 (3-3.5)	V, S, M	**Benzene: 2.6 mg/kg** Benzo(a)anthracene: 3.9J mg/kg **Benzo(a)pyrene: 4.2J mg/kg** Benzo(b)fluoranthene: 2.4J mg/kg
					O, S, F	S1383E2 (8.5-9)	V, S, M	**Benzene: 13 mg/kg** Arsenic: 49.3 mg/kg Iron: 26200 mg/kg
S1382 1/6/03 Full RFI 2nd Iteration SWMU 41	16	5.5	Fill: 0-15.5 (catalyst beads at 7.5-9.5; black sludge at 7-7.5 and 9.5-15.5) Peat: 15.5-16	1261 (9.5-10)	O, S, F	S1382E4 (9.5-10)	V, S, M	**Benzene: 27 mg/kg** *Ethylbenzene: 130 mg/kg (Impact to Groundwater—not applicable)* Xylenes: 460 mg/kg Cyclohexane: 170 mg/kg Arsenic: 29.2 mg/kg Lead: 615 mg/kg
					O, S, F	S1382H3 (15-15.5)	V, S, M	*Benzene: 2.8 mg/kg (Impact to Groundwater—not applicable)* Benzo(a)anthracene: 1J mg/kg **Benzo(a)pyrene: 0.84J mg/kg** Arsenic: 70 mg/kg Iron: 38200 mg/kg
S1381 1/6/03 Full RFI 2nd Iteration SWMU 41	12	2.5	Fill: 0-8 (black sludge at 7.5-8) Clay: 8-12	228 (11-12)	P, S, F	S1381D1 (6-6.5)	V, S, M	Benzo(a)anthracene: 1.3 mg/kg **Benzo(a)pyrene: 1.2 mg/kg** Benzo(b)fluoranthene: 1.4 mg/kg Antimony: 89.1 mg/kg Arsenic: 76.8 mg/kg Iron: 38600 mg/kg Lead: 1880 mg/kg Zinc: 2060 mg/kg
					P, S, F	S1381D4 (7.5-8)	V, S, M	Arsenic: 43.8 mg/kg Copper: 607 mg/kg

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S1380 1/6/03 Full RFI 2nd Iteration SWMU 41	16	2	Fill: 0-15 (black sludge at 8-9 and 14-15) Peat: 15-16	362 (9-9.5)	O, S, F	S1380E3 (9-9.5)	V, S, M	**Benzo(a)pyrene: 0.74J mg/kg** Iron: 25900 mg/kg
					O, S, F	S1380H2 (14.5-15)	V, S, M	None
S1331 9/3/02 SWMU 41	12	4	Fill: 0-8 (black NAPL stained, product like odor at 6-8) Clay: 8-12	171 (11-11.5)	O, S, F	S1331D2 (6.5-7)	TPH	TPH: 4000 mg/kg (gas oil)
S0858 9/10/02 Full RFI SWMU 41	18	2	Fill: 0-14 (black stain at 2-6) Clay: 14-18 (black stain at 14-16)	26 (1-2)	P, U, F	S0858A3 (1-1.5)	V, S, M	None
					P, S, F	S0858 (3-5)	Phys. Char.	
					P, S, F	S0858C1 (4-4.5)	V, S, M, SPLP metals	None SPLP Antimony: .224 mg/L
					P, S, N	S0858I1 (16-16.5)	V, S, M	Iron: 42100 mg/kg
S0840/ MW136 8/19/02 Full RFI SWMU 41	11	2	Fill: 0-4: Clay: 4-12	34 (9-9.5)	P, U, F	S0840A2 (0.5-1)	V, S, M	Iron: 24300 mg/kg
					P, S, F	S0840B1 (2-2.5)	V, S, M	Iron: 26500 mg/kg
					P, S, N	S0840D3 (7-7.5)	V, S, M	Iron: 40700 mg/kg
					Water	MW136 11/26/02	V, S, M, water quality	None
S0800 7/25/02 Full RFI SWMU 24	16	--	Fill: 0-8: Peat: 8-12.5 (slight petroleum odor at 8-11) Clay 12.5-16	6.6 (8-8.5)	P, U, F	S0800A2 (0.5-1)	S, M, TOL V	None

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					P, U, N	S0800F2 (10.5-11)	V, S, M, TOL	Arsenic: 43 mg/kg Iron: 24700 mg/kg
					P, U, N	S0800H4 (15.5-16)	V, S, M, TOL	Iron: 35200 mg/kg
S0799 7/25/02 Full RFI SWMU 24	20	--	Fill: 0-7.5: Clay/peat: 7.5-20 (black staining, strong petroleum odor, jar test: 1/10" LNAPL film)	522 (10-10.5)	O, U, F	S0799A4 (1.5-2)	S, M, TOL V	None
					O, U, N	S0799F1 (10-10.5)	V, S, M, TOL (MS/MSD)	**Benzene: 29.3 mg/kg** Xylene: 161 mg/kg 1,2,4-Trimethylbenzene: 160 mg/kg Arsenic: 55.6 mg/kg Iron: 28100 mg/kg
					O, U, N	S0799J4 (19.5-20)	V, S, M, TOL	Iron: 37100 mg/kg
S0798 7/25/02 Full RFI SWMU 41	24	3.7	Fill: 0-12: (strong petroleum odor at 3.7 to 7.5; 8-11.8 interval saturated at top of macro core with water and product globules and sheen) Peat and Clay : 11.8-24 (petroleum odor at 11.8-15, H_2S odor at 15-22)	280 (7.5-8)	O, U, F	S0798A4 (1.5-2)	V, S, M, TOL	Antimony: 32.1 mg/kg
					O, S, F	S0798C3 (5-5.5)	V, S, M, TOL	None
					O, S, N	S0798L3 (23-23.5)	V, S, M, TOL	None
S0797 8/5/02 Full RFI AOC 23	10	5	Fill: 0-7: (catalyst beads at 4-5.5) Clay, some peat: 7-10	57 (5-5.5)	O, U, F	S0797A4 (1.5-2)	V, S, M	Iron: 29900 mg/kg
					O, S, F	S0797C3 (5-5.5)	V, S, M	Iron: 25400 mg/kg
					O, S, N	S0797E2 (8.5-9)	V, S, M	Iron: 45300 mg/kg

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Boring/ Date/ Report	Total Depth of Boring	Depth to Water[1]	Lithologic Description[2] (Observation Notes)	Maximum PID Response, ppm_v (Depth)	Sample Type[3]	Sample ID (Depth)	Analyses[4]	COC Concentrations Greater Than Delineation Criteria
S0796 7/23/02 Full RFI AOC 23	16	4	Fill: 0-4: (Strong petroleum odor at 3.5-4) Clay: 4-16 (petroleum odor)	142 (3.5-4)	O, U, F	S0796A4 (1.5-2)	V, S, M,	None
						S0796 (0-2)	Phys.Char.	
					O, U, F	S0796B4 (3.5-4)	V, S, M	**Benzene: 2.26 mg/kg** Arsenic: 56 mg/kg Iron: 191000 mg/kg Lead: 8450 mg/kg
					O, S, N	S0796G4 (13.5-14)	V, S, M	Iron: 34500 mg/kg
MW0032 3/17/97 Stabilization Measures	8	2.5	Fill: 0-6 Clay and meadow mat: 6-8	8 (8)	Water	MW0032 12/3/02	V, S, M, water quality	None
MW0031 3/17/97 Stabilization Measures	8	4	Fill: 0-6 Peat: 6-8	24 (8)	Water	MW0031 12/3/02	V, S, M, water quality	None
MW0030 3/17/97 Stabilization Measures	10	3	Fill: 0-8 Clay and meadow mat/peat: 8-10	0	Water	MW0030 12/4/02	V, S, M water quality	Thallium: 11J ug/L
H0462 10/20/99 2nd OWSS (NF4)	16	6	Fill: 0-10: (dessicant beads, sheen on beads at 6-8) Clay to Peat: 10-16 (trace black liquid at 10-10.5, H_2S odor)-	49 (10-11)	Water	H0462	V, S, M	**Benzene: 5 ug/l** Lead: 19.5 ug/l
H0441 10/11/99 2nd OWSS (NF4)	12	2	Fill:0-6: (odor, black staining at 6-8)	287 (9 10)	Water	H0441	V, S, M	**Benzene: 8 ug/l** Xylenes: 300 ug/L Arsenic: 8.81 ug/l
HP0081 1st Groundwater SWMU 41	10	9	Black viscous liquid was noted on the depth to water probe at approximately 9’	35	Water	HP0081A	TPH GC fingerprint	

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HP0080 8/20/97 1st Groundwater SWMU 41	10	9	See SB0184	0	Water	HP0080A	V, S	**Benzene: 6 ug/l**
HP0079 8/19/97 1st Groundwater SWMU 41	15	13.5	See SB0184	0	Water	HP0079A	V, S	**Benzene: 2 ug/l**
SB0184 2/13/96 1st Soils SWMU 41	8	7.5	Fill :0-8: (petroleum staining and odor at 1-2; petroleum odor at 3-4; tr asphalt at 5-6; strong petroleum odor at 6-8)	28 (6-8)	P, U, F	SB0184SD (SB0185SD) (6-8)	V, S	Benzo(a)anthracene: 17 mg/kg
SB0151 12/6/95 1st Soils SWMU 41	8	2	Fill: 0-8: (strong petroleum odor at 2-4)	108 (2-4)	O, S, F	SB0151SB (2-4)	V, S	None
U041003 12/6/96 1st Soils	5.5	2	Fill :0-5.5: (tr lignite at 0-2; slightly dark staining at 2-4; dark staining, petroleum odor at 4-5.5; refusal at 5.5)	14.8 (4-6)	None			
U041001 12/6/95 1st Soils SWMU 41	4.5	2	Fill :0-4.5: (dark staining at 2.3-2.5 and 3.4-3.5)	0	None			
SB0055 10/31/95 1st Soils SWMU 24	10	8	Fill: 0-9.8: (petroleum odor and staining at 0-4 and 9-10)	1,413 (4-6)	P, U, F	SB0055SC (4-6)	V, S, Pb, TEL	None
U02404B 10/31/95 1st Soils SWMU 24	10	8	Fill: 0-8: (petroleum staining at 3-4; petroleum odor at 8-10)	24 (4-6)	None			
U02401A 10/31/95 1st Soils SWMU 24	5.5	2.5	Fill: 0-5.5: (black stained sand petroleum odor at 1.5-2; petroleum odor at 2-4; refusal at 5.5-concrete)	412 (0-2)	None			
Transect 4			Visible staining in vibracore at 0-6 and 39-45 inches at SED4A		Surface water	SWM4C (filtered)	V, S, M water quality	Nickel: 23J ug/L

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					Sediment	SED 4A (0-6 in)	V, S, M	Acenaphthene: 0.036J mg/kg Acenaphthylene: 0.063J mg/kg Anthracene: 0.2 mg/kg Benzo(a)anthracene: 0.72 mg/kg **Benzo(a)pyrrene: 1.1 mg/kg** Benzo(g,h,i)perylene: 1 mg/kg Benzo(k)fluoranthene: 0.44 mg/kg Chrysene: 1 mg/kg Dibenzo(a,h)anthracene: 0.2 mg/kg Fluoranthene: 1.2 mg/kg Fluorene: 0.052J mg/kg Indeno(1,2,3-cd)pyrene: 0.76 mg/kg Phenanthrene: 0.6 mg/kg Pyrene: 1.8 mg/kg Arsenic: 9.4 mg/kg Cadmium: 2J mg/kg Copper: 313 mg/kg Lead: 113 mg/kg Mercury: 0.49 mg/kg Nickel: 64.2 mg/kg Zinc: 283 mg/kg
					Sediment	SED4A (39-45 in)	V, S, M	Xylene: 3 mg/kg 2-methylnaphthalene: 1.4 mg/kg Acenaphthene: 0.64 mg/kg Acenaphthylene: 0.29 mg/kg Anthracene: 0.97 mg/kg Benzo(a)anthracene: 2 mg/kg **Benzo(a)pyrrene: 2 mg/kg** Benzo(g,h,i)perylene: 2.4 mg/kg Benzo(k)fluoranthene: 0.46 mg/kg Chrysene: 2.8 mg/kg Dibenzo(a,h)anthracene: 0.48 mg/kg Fluoranthene: 2.5 mg/kg Fluorene: 1.1 mg/kg Indeno(1,2,3-cd)pyrene: 0.86 mg/kg Naphthalene: 0.42 mg/kg Phenanthrene: 4.5 mg/kg Pyrene: 6.1 mg/kg Antimony: 2.9J mg/kg Arsenic: 43.6 mg/kg Cadmium: 3J mg/kg Copper: 322 mg/kg Lead: 393 mg/kg Mercury: 1.7 mg/kg Nickel: 63.4 mg/kg Silver: 1.5J mg/kg Zinc: 550 mg/kg

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					Sediment	SED4B (0-6)	V, S, M	Acenaphthylene: 0.092 mg/kg Anthracene: 0.28 mg/kg Benzo(a)anthracene: 0.51 mg/kg **Benzo(a)pyrene: 0.6 mg/kg** Benzo(g,h,i)perylene: 0.5 mg/kg Benzo(k)fluoranthene: 0.24 mg/kg Chrysene: 0.68 mg/kg Dibenzo(a,h)anthracene: 0.11 mg/kg Fluoranthene: 1.1 mg/kg Fluorene: 0.092 mg/kg Indeno(1,2,3-cd)pyrene: 0.41 mg/kg Phenanthrene: 1 mg/kg Pyrene: 1.4 mg/kg Cadmium: 1.2J mg/kg Copper: 313 mg/kg Lead: 68.1 mg/kg Mercury: 0.18 mg/kg Nickel: 55.4 mg/kg Zinc: 228 mg/kg
					Sediment	SED 4C (0-6)	V, S, M	Arsenic: 8.6 mg/kg Cadmium: 1.4J mg/kg Nickel: 28.6 mg/kg
Transect 5			Visible staining in vibracore at 0-6 inches at SED5C		Surface water	SW5C (filtered)	V, S, M, water quality	Manganese: 123 ug/L Nickel: 34.5J ug/L
					Sediment	SED5A (0-6 in)	V, S, M	Acenaphthene: 0.045J mg/kg Acenaphthylene: 0.088 mg/kg Anthracene: 0.19 mg/kg Benzo(a)anthracene: 0.83 mg/kg **Benzo(a)pyrrene: 1.3 mg/kg** Benzo(g,h,i)perylene: 1.2 mg/kg Benzo(k)fluoranthene: 0.43 mg/kg Chrysene: 1.1 mg/kg Dibenzo(a,h)anthracene: 0.28 mg/kg Fluoranthene: 1.1 mg/kg Fluorene: 0.072 mg/kg Indeno(1,2,3-cd)pyrene: 0.64 mg/kg Phenanthrene: 0.7 mg/kg Pyrene: 2.3 mg/kg Arsenic: 11.7 mg/kg Cadmium: 1.6J mg/kg Copper: 595 mg/kg Lead: 107 mg/kg Mercury: 0.19 mg/kg Nickel: 86.9 mg/kg Zinc: 359 mg/kg

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					Sediment	SED5B (0-6 in)	V, S, M	Benzo(g,h,i)perylene: 0.27 mg/kg Cadmium: 1.2J mg/kg Copper: 355 mg/kg Lead: 47.1 mg/kg Nickel: 38.7 mg/kg Zinc: 174 mg/kg
					Sediment	SED5C (0-6 in)	V, S, M	2-Methylnaphthalene: 0.13 mg/kg Acenaphthene: 0.068 mg/kg Acenaphthylene: 0.11 mg/kg Anthracene: 0.18 mg/kg Benzo(a)anthracene: 0.54 mg/kg **Benzo(a)pyrene: 0.71 mg/kg** Benzo(g,h,i)perylene: 0.68 mg/kg Benzo(k)fluoranthene: 0.32 mg/kg Chrysene: 0.96 mg/kg Dibenzo(a,h)anthracene: 0.17 mg/kg Fluoranthene: 1.1 mg/kg Fluorene: 0.065 mg/kg Indeno(1,2,3-cd)pyrene: 0.54 mg/kg Pyrene: 1.4 mg/kg Arsenic: 34.4 mg/kg Cadmium: 2.8J mg/kg Chromium: 97.5 mg/kg Copper: 8030 mgkg Lead: 378 mg/kg Nickel: 2480 mg/kg Silver: 5.4 mg/kg Zinc: 2970 m/kg

NOTES:
Benzene and benzo(a)pyrene are highlighted in bold because they are indicator constituents of concern (COCs)
Shaded rows indicate samples collected from nearby SWMUs/AOCs
ppm_v = parts per million (volume basis)
All depths referenced on this summary table are in feet below the ground surface.
PID = Photoionization detector.
ID = Identifier.
mg/kg = milligrams per kilogram (equivalent to parts per million).
µg/L = micrograms per liter (equivalent to parts per million).
[1]Depth to water as observed during borehole advancement.

[2]"Fill" encountered within the completed borings was characteristically described as an asphalt layer (typical) underlain by a heterogeneous gravel to clay mixture of unconsolidated materials, ranging in color from tan to gray with occasional construction debris (e.g., brick) present. In some locations, the fill material is further characterized by containing a slag or beaded material, in which case it is noted within the table. Also noted on the table are any other olfactory or visual observations that indicate potential petroleum-type impacts within the fill unit were observed.

[3]P – property boundary, O – on-site, U – unsaturated, S – saturated, F – fill, N – native. "None" indicates that no sample was collected.

[4]V – VOCs, S – SVOCs, M – metals, Pb – lead, TOL – total organic lead, TEL – tetraethyl lead, TPH – Total Petroleum Hydrocarbons; SPLP– Synthetic Precipitation Leaching Procedure; -Phys. Char.--physical characteristics.